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- (63) Related by continuation (CON) or continuation-in-part (CIP) to earlier application: US 60/203,708 (CIP) Filed on 12 May 2000 (12.05.2000)
- (71) Applicants (*for all designated States except US*): **FIBROGEN, INC.** [US/US]; 225 Gateway Boulevard, South San Francisco, CA 94080 (US). **THE BOARD OF TRUSTEES OF THE LELAND STANFORD JUNIOR UNIVERSITY** [US/US]; 900 Welch Road, Suite 350, Palo Alto, CA 94304-1850 (US).
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- (75) Inventors/Applicants (*for US only*): **FINDELL, Paul, R.** [US/US]; 378 Sussex Street, San Francisco, CA 94131 (US). **MARINKOVICH, M., Peter, III** [US/US]; 43 Woodhill Drive, Redwood City, CA 94061 (US).
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(54) Title: METHODS OF AFFECTING LAMININ 5 PROCESSING

(57) Abstract: The present invention relates to a method for diagnosing, treating, and preventing conditions associated with altered expression or activity of laminin 5 using BMP-1 inhibitors.

## INTERNATIONAL SEARCH REPORT

International Application No

PC 01/15417

A. CLASSIFICATION OF SUBJECT MATTER  
 IPC 7 A61K45/00 A61K31/18 A61K31/415 A61P35/00

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 A61K A61P

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EP0-Internal, BIOSIS, WPI Data, CHEM ABS Data, EMBASE, MEDLINE

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X,P	WO 00 50390 A (FIBROGEN INC) 31 August 2000 (2000-08-31) cited in the application page 149; claim 66 page 151; claim 67	15-17
E	WO 01 56996 A (BAUER UDO ;HO WEN BIN (DE); FIBROGEN INC (US)) 9 August 2001 (2001-08-09) cited in the application page 26; claims 30,31	15-17
X	WO 96 40101 A (CIBA GEIGY AG ;MACPHERSON LAWRENCE JOSEPH (US); PARKER DAVID THOMA) 19 December 1996 (1996-12-19)	15-17
Y	page 16; claim 1	15-17
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☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

## \* Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

25 March 2002

Date of mailing of the international search report

25.03.02

Name and mailing address of the ISA

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## INTERNATIONAL SEARCH REPORT

International Application No

PC, S 01/15417

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 211 657 A (SASAKI MAKOTO ET AL) 18 May 1993 (1993-05-18) claims 1,6,29 ---	15-17
X	WO 00 26342 A (UNIV NORTHWESTERN) 11 May 2000 (2000-05-11) claims 1-5,10,11 ---	15-17
Y	MCGOWAN K, VEITCH D, FINDELL P, RUSSELL A, MARTIN G, MARINKOVICH P: "BMP-1 Processing of Laminin-5 Controls Migration of Human Epithelial Cells" THE JOURNAL OF INVESTIGATIVE DERMATOLOGY, vol. 114, no. 4, April 2000 (2000-04), page 767 XP001057962 abstract ---	15-17
A	DATABASE BIOSIS [Online] BIOSCIENCES INFORMATION SERVICE, PHILADELPHIA, PA, US; 1996 KESSLER EFRAT ET AL: "Bone morphogenetic protein-1: The type I procollagen C-proteinase." Database accession no. PREV199698674888 XP002194099 abstract & SCIENCE (WASHINGTON D C), vol. 271, no. 5247, 1996, pages 360-362, ISSN: 0036-8075 -----	

## INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US 01/15417**Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)**

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.: 1-14, 18-24, 36  
because they relate to subject matter not required to be searched by this Authority, namely:  
Rule 39.1(iv) PCT - Diagnostic method practised on the human or animal body  
therapy
2. ☒ Claims Nos.: 15-17  
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:  
see FURTHER INFORMATION sheet PCT/ISA/210
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

**Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)**

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:  
15-17

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.  
☐ No protest accompanied the payment of additional search fees.

## FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box I.2

Claims Nos.: 15-17

Present claims 15-17 relate to a composition defined by reference to a desirable characteristic or property, namely the ability to affect processing of laminin 5 by a BMP-1 related protein.

The claims cover all compositions having this characteristic or property, whereas the application provides support within the meaning of Article 6 PCT and/or disclosure within the meaning of Article 5 PCT for only a very limited number of such compositions. In the present case, the claims so lack support, and the application so lacks disclosure, that a meaningful search over the whole of the claimed scope is impossible. Independent of the above reasoning, the claims also lack clarity (Article 6 PCT). An attempt is made to define the composition by reference to a result to be achieved. Again, this lack of clarity in the present case is such as to render a meaningful search over the whole of the claimed scope impossible. Consequently, the search has been carried out for those parts of the claims which appear to be clear, supported and disclosed, namely those parts relating to the compounds 1-3 (Figure 1A-1C) with due respect of the underlying idea.

The applicant's attention is drawn to the fact that claims, or parts of claims, relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claims: 15-17

Composition for the treatment of a condition associated with increased expression or activity of laminin 5.

2. Claim : 25

A diagnostic kit comprising an anti-BMP-1 antibody and a labeled reagent.

3. Claims: 26,31

A method of screening for an agent that affects processing of laminin 5 by BMP-1 related proteins.

4. Claim : 27

An isolated polypeptide of SEQ ID 1.

5. Claim : 28

An isolated polynucleotide encoding the polypeptide of SEQ ID 1.

6. Claim : 29

A complementary polynucleotide.

7. Claim : 30

An antibody that binds to the polypeptide of SEQ ID 1.

8. Claim : 32

An isolated polypeptide of SEQ ID 2.

9. Claim : 33

An isolated polypeptide of SEQ ID 3.

10. Claim : 34

An isolated polypeptide of SEQ ID 4.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

11. Claim : 35

An isolated polypeptide of SEQ ID 5.

# INTERNATIONAL SEARCH REPORT

nation on patent family members

International Application No

PCT/US 01/15417

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 0050390	A	31-08-2000	AU 4002400 A CN 1348441 T EP 1154992 A1 WO 0050390 A1	14-09-2000 08-05-2002 21-11-2001 31-08-2000
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